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HAYNES AND BOONE, LLP 901 MAIN STREET, SUITE 3100 DALLAS, TX 75202			EXAMINER KLINGER, SCOTT M	
			ART UNIT 2153	PAPER NUMBER
DATE MAILED: 06/16/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/631,251

**Applicant(s)**

WURCH ET AL.

**Examiner**

Scott M. Klinger

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 5-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

Claims 5-30 are pending.

#### *Response to Arguments*

**Note:** Applicant's remarks are in **bold** text. Examiner's responses are indented.

The drawings were received on 21 March 2005. These drawings are acceptable.

Applicant's arguments have been fully considered but they are not persuasive.

**Claims 23-26 have been rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Applicant has amended claim 23 and submits that claims 23-26 are now in compliance with 35 U.S.C. § 101.**

It is suggested that claims 23-26 be amended to either a) include the computer program in a process where the computer is executing the computer program's instructions; or b) combine the computer program in conjunction with a physical structure, such as a computer memory.

**Claim 5 was rejected under 35 U.S.C. § 112, First Paragraph as failing to comply with the written description requirement. Applicant respectfully traverses and directs the Examiner's attention to the originally filed specification at lines 180-196 as one example of support for the amendments to claim 5.**

The specification line numbers begin at 1 for each page. Examiner believes that lines 180-196, map to page 9, lines 3-19. The referenced subject matter describes a way to switch between one NAT to another by detecting which adapters are active, the NAA does not discern between network access technologies, but merely adapters. Although an example of

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switching between two NATs is given (see, page 6, lines 10-12), the sighted subject matter does not mention "*detecting a change in network access technology currently in use by the platform from the first network access technology to a second network access technology.*" as claimed.

... "assigning a network adapter, wherein the network adapter is based on a first data link layer network access technology as a primary network adapter... detecting an active network adapter, wherein the active network adapter is based on the second data link layer network access technology," (emphasis added). This is neither taught nor suggested by Vepa or Jones, nor by their combination.

Jones, Fig. 2 shows that the data link layers for the 2 different network access technologies are different. The data link layer for the first (wired) access technology consists of sub-layers 44 and 50, whereas the data link layer for the second (wireless) access technology consists of sub-layers 44, 58 and 54.

**Applicant submits that the Examiner has submitted no evidence or particular findings to support his conclusion as required.**

Networks with both wired and wireless access points are well known in the art. A person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing a load balancing system so as to use all available network connections in said load balancing system.

### ***Claim Rejections - 35 USC § 101***

Claims 23-26 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer

components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. It is suggested that claims 23-26 be amended to either a) include the computer program in a process where the computer is executing the computer program's instructions; or b) combine the computer program in conjunction with a physical structure, such as a computer memory.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 5 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Newly amended claim 5 states, in part: "*detecting a change in network access technology currently in use by the platform from the first network access technology to a second network access technology.*" Although the specification describes a system that switches between different access technologies the step of detecting a change in the network access technology itself is never disclosed.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-8, 10-15, 17-20, and 22-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vepa in view of Jones et al. (U.S. Patent Number 6,137,802, hereinafter "Jones").

In referring to claim 5, as understood, Vepa shows substantial features of the claimed invention including:

- Determining an active network adapter (commonly referred to as a Network Interface Card or NIC) by monitoring packet traffic and hardware status of one or more network adapters:

*"The fault tolerance module dynamically adds and removes MAC addresses from the list depending on the status of each NIC", column 14, lines 22-28, "In step 820, the fault tolerance module in the present embodiment determines whether the incoming data packet is a 'keep-alive' data packet. Data packets are typically sent to determine whether the connection between a client computer system and the server computer system is still active. Also, data packets may also be sent to and from the various NICs as a means for determining whether a NIC is active."* (Vepa, col. 13, 32-34)

- The engagement of the active network adapter is invisible to the active network application:

Vepa, Figure 4 shows the Application Layer **310** only communicates with the Network Layer **320**, the layers below the Network Layer **320** are invisible to Application Layer **310**

- The NAA defines a virtual anchor adapter driver that is known as the only adapter driver: Vepa, Figure 4 shows the Dynamic Access Software Element **330** and Load Balancing Scheme **335** act as a NAA for computer system **190**, from the figure it can be seen that the Network Layer **320** is connected to the Load Balancing Scheme **335** and cannot see the plurality of NIC drivers, **340a-340d**
- Assigning a predetermined network adapter as a primary network adapter:

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It is inherent in a fault tolerance system to have first or primary NIC, to be used initially: claim 1 of Vepa, *"executing a load balancing scheme to specify a first NIC from said plurality of NICs"*

However, Vepa does not explicitly show the network adapters are based on different access technologies. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Vepa as evidenced by Jones.

In analogous art, Jones discloses an automatic media switching apparatus and method. Jones, Fig. 4 shows a computer 70 with both wireless hardware 56 and wired hardware 52. Jones, Fig. 2 shows that the data link layers for the 2 different network access technologies are different. The data link layer for the first (wired) access technology consists of sub-layers 44 and 50, whereas the data link layer for the second (wireless) access technology consists of sub-layers 44, 58 and 54.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Vepa so as to use different access technologies for one or more of the NICs, such as taught by Jones, in order to provide load balancing and fault tolerance for networks that allow connections via multiple network access technologies.

In referring to claim 6, Vepa in view of Jones discloses,

- Initially setting the virtual anchor adaptor driver as the network adapter driver associated with the primary adapter:

It is inherent in a fault tolerance system to associate the adapter with the first or primary NIC

In referring to claim 7, Vepa in view of Jones discloses,

- Changing the hardware source address of outgoing data packets to that of the active network adapter:

*"The media access control (MAC) address that represents the selected NIC is inserted in the outgoing data packet"* (Vepa, col. 4, lines 12-14)

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- Changing the hardware destination address of incoming data packets to that of the primary network adapter:

*"a filter that is adapted to mask a portion of a MAC address in an incoming data packet received at a NIC such that the MAC address the incoming data packet is equivalent to the MAC address representing the NIC "* (Vepa, col. 4, lines 48-51)

In referring to claim 8 and 10, Vepa in view of Jones discloses,

- Receiving information from a network adapter about connection or disconnection status:  
*"The fault tolerance module dynamically adds and removes MAC addresses from the list depending on the status of each NIC"* (Vepa, col. 13, 32-34)

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In referring to claim 11, Vepa shows substantial features of the claimed invention including:

- Utilizing the first network access technology for executing the active network application:

It is inherent in a fault tolerance system to have first or primary NIC, to be used initially: claim 1 of Vepa, *"executing a load balancing scheme to specify a first NIC from said plurality of NICs"*

- Selecting the second network access technology for continuing the active network application without interrupting the network application through a network access arbitrator by arbitrating between the first network adapter driver and the second network adapter driver for sending and receiving information:

By definition a fault tolerance and fail over support scheme is designed to allow the switching from one network interface to another without interrupting the active network application: Vepa claim 2, *"automatically switching from said first NIC to a second NIC when said fault tolerance scheme indicates said first NIC is not available"*

However, Vepa does not explicitly show the network adapters are based on different access technologies. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Vepa as evidenced by Jones.



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However, Vepa does not explicitly show the network adapters are based on different access technologies. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Vepa as evidenced by Jones.

In analogous art, Jones discloses an automatic media switching apparatus and method. Jones, Fig. 4 shows a computer 70 with both wireless hardware 56 and wired hardware 52. Jones, Fig. 2 shows that the data link layers for the 2 different network access technologies are different. The data link layer for the first (wired) access technology consists of sub-layers 44 and 50, whereas the data link layer for the second (wireless) access technology consists of sub-layers 44, 58 and 54.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Vepa so as to use different access technologies for one or more of the NICs, such as taught by Jones, in order to provide load balancing and fault tolerance for networks that allow connections via multiple network access technologies.

In referring to claim 12, Vepa in view of Jones discloses,

- The NAA defines a virtual anchor adapter driver that is known as the only adapter driver: Vepa, Figure 4 shows the Dynamic Access Software Element 330 and Load Balancing Scheme 335 act as a NAA for computer system 190, from the figure it can be seen that the Network Layer 320 is connected to the Load Balancing Scheme 335 and cannot see the plurality of NIC drivers, 340a-340d

In referring to claim 13, Vepa in view of Jones discloses,

- Assigning a predetermined network adapter as a primary network adapter:  
It is inherent in a fault tolerance system to have first or primary NIC, to be used initially: claim 1 of Vepa, *"executing a load balancing scheme to specify a first NIC from said plurality of NICs"*
- Initially setting the virtual anchor adaptor driver as the network adapter driver associated with the primary adapter:

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It is inherent in a fault tolerance system to associate the adapter with the first or primary NIC

In referring to claim 14, Vepa in view of Jones discloses,

- Detecting when the second network adapter driver is active:  
*Vepa, col. 13, 32-34 (see full quote above)*
- Changing the hardware source address of outgoing data packets to that of the active network adapter:  
*Vepa, col. 4, lines 12-14 (see full quote above)*
- Changing the hardware destination address of incoming data packets to that of the primary network adapter:  
*Vepa, col. 4, lines 48-51 (see full quote above)*

In referring to claim 15, Vepa in view of Jones discloses,

- Receiving information from a network adapter about connection or disconnection status:  
*Vepa, col. 13, 32-34 (see full quote above)*

---

In referring to claim 17 and 23, Vepa shows substantial features of the claimed invention including:

- Determining an active network adapter (commonly referred to as a Network Interface Card or NIC) by monitoring packet traffic and hardware status of one or more network adapters:  
*Vepa, col. 13, 32-34)*
- The NAA defines a virtual anchor adapter driver that is known as the only adapter driver:  
*Vepa, Figure 4 shows the Dynamic Access Software Element 330 and Load Balancing Scheme 335 act as a NAA for computer system 190, from the figure it can be seen that*

the Network Layer 320 is connected to the Load Balancing Scheme 335 and cannot see the plurality of NIC drivers, 340a-340d

- Assigning a predetermined network adapter as a primary network adapter:

It is inherent in a fault tolerance system to have first or primary NIC, to be used initially: claim 1 of Vepa, *"executing a load balancing scheme to specify a first NIC from said plurality of NICs"*

- Selecting the second network access technology for continuing the active network application without interrupting the network application through a network access arbitrator by arbitrating between the first network adapter driver and the second network adapter driver for sending and receiving information:

By definition a fault tolerance and fail over support scheme is designed to allow the switching from one network interface to another without interrupting the active network application: Vepa claim 2, *"automatically switching from said first NIC to a second NIC when said fault tolerance scheme indicates said first NIC is not available"*

However, Vepa does not explicitly show the network adapters are based on different access technologies. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Vepa as evidenced by Jones.

In analogous art, Jones discloses an automatic media switching apparatus and method. Jones, Fig. 4 shows a computer 70 with both wireless hardware 56 and wired hardware 52. Jones, Fig. 2 shows that the data link layers for the 2 different network access technologies are different. The data link layer for the first (wired) access technology consists of sub-layers 44 and 50, whereas the data link layer for the second (wireless) access technology consists of sub-layers 44, 58 and 54.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Vepa so as to use different access technologies for one or more of the NICs, such as taught by Jones, in order to provide load balancing and fault tolerance for networks that allow connections via multiple network access technologies.

In referring to claim 18, *Vepa* in view of Jones discloses,

- Initially setting the virtual anchor adaptor driver as the network adapter driver associated with the primary adapter:

It is inherent in a fault tolerance system to associate the adapter with the first or primary NIC

In referring to claim 19, *Vepa* in view of Jones discloses,

- Changing the hardware source address of outgoing data packets to that of the active network adapter:

*Vepa*, col. 4, lines 12-14 (see full quote above)

- Changing the hardware destination address of incoming data packets to that of the primary network adapter:

*Vepa*, col. 4, lines 48-51 (see full quote above)

In referring to claim 20, *Vepa* in view of Jones discloses,

- Receiving information from a network adapter about connection or disconnection status:

*Vepa*, col. 13, 32-34 (see full quote above)

In referring to claim 22, *Vepa* in view of Jones discloses,

- Detecting whether the primary network adapter is active:

*Vepa*, col. 13, 32-34 (see full quote above)

In referring to claim 24, *Vepa* in view of Jones discloses,

- The NAA defines a virtual anchor adapter driver that is known as the only adapter driver:  
*Vepa*, Figure 4 shows the Dynamic Access Software Element 330 and Load Balancing Scheme 335 act as a NAA for computer system 190, from the figure it can be seen that the Network Layer 320 is connected to the Load Balancing Scheme 335 and cannot see the plurality of NIC drivers, 340a-340d

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In referring to claim 25, Vepa in view of Jones discloses,

- Assigning a predetermined network adapter as a primary network adapter:

It is inherent in a fault tolerance system to have first or primary NIC, to be used initially: claim 1 of Vepa, *"executing a load balancing scheme to specify a first NIC from said plurality of NICs"*

- Initially setting the virtual anchor adaptor driver as the network adapter driver associated with the primary adapter:

It is inherent in a fault tolerance system to associate the adapter with the first or primary NIC

In referring to claim 26, Vepa in view of Jones discloses,

- Changing the hardware source address of outgoing data packets to that of the active network adapter:

*Vepa, col. 4, lines 12-14* (see full quote above)

- Changing the hardware destination address of incoming data packets to that of the primary network adapter:

*Vepa, col. 4, lines 48-51* (see full quote above)

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In referring to claim 27, Vepa shows substantial features of the claimed invention including:

- Determining an active network adapter by monitoring packet traffic and hardware status of one or more network adapters:

*Vepa, col. 13, 32-34* (see full quote above)

- Receiving a plurality of data packets from at least one application:

Vepa, Figure 3B shows outgoing data packet 215, from an application

- Dynamically engaging the active network adapter by a NAA disposed between a data link layer and a network layer to process at least some of the data packets, wherein the engagement of the network adapter is transparent to the application if the application is disposed in L3 or higher:

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Vepa, Figure 4 shows the NAA (elements **330** and **335**) is disposed between the link and network layers. Application layer **310** is shown to be disposed above the network layer (L3). Vepa, Figure 3A shows NIC **108B** is dynamically engaged.

However, Vepa does not explicitly show the network adapters are based on different access technologies. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Vepa as evidenced by Jones.

In analogous art, Jones discloses an automatic media switching apparatus and method. Jones, Fig. 4 shows a computer **70** with both wireless hardware **56** and wired hardware **52**. Jones, Fig. 2 shows that the data link layers for the 2 different network access technologies are different. The data link layer for the first (wired) access technology consists of sub-layers 44 and 50, whereas the data link layer for the second (wireless) access technology consists of sub-layers 44, 58 and 54.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Vepa so as to use different access technologies for one or more of the NICs, such as taught by Jones, in order to provide load balancing and fault tolerance for networks that allow connections via multiple network access technologies.

In referring to claims 28, Vepa in view of Jones discloses,

- The NAA defines a virtual anchor adapter driver that is known as the only adapter driver: Vepa, Figure 4 shows the Dynamic Access Software Element **330** and Load Balancing Scheme **335** act as a NAA for computer system **190**, from the figure it can be seen that the Network Layer **320** is connected to the Load Balancing Scheme **335** and cannot see the plurality of NIC drivers, **340a-340d**

In referring to claims 29, Vepa in view of Jones discloses,

- Assigning a predetermined network adapter as a primary network adapter:

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It is inherent in a fault tolerance system to have first or primary NIC, to be used initially: claim 1 of Vepa, *"executing a load balancing scheme to specify a first NIC from said plurality of NICs"*

- Initially setting the virtual anchor adaptor driver as the network adapter driver associated with the primary adapter:

It is inherent in a fault tolerance system to associate the adapter with the first or primary NIC

In referring to claim 30, Vepa in view of Jones discloses,

- Changing the hardware source address of outgoing data packets to that of the active network adapter:

*"The media access control (MAC) address that represents the selected NIC is inserted in the outgoing data packet"* (Vepa, col. 4, lines 12-14)

- Changing the hardware destination address of incoming data packets to that of the primary network adapter:

*"a filter that is adapted to mask a portion of a MAC address in an incoming data packet received at a NIC such that the MAC address the incoming data packet is equivalent to the MAC address representing the NIC "* (Vepa, col. 4, lines 48-51)

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Claims 9, 16, and 21, are rejected under 35 U.S.C. 103(a) as being unpatentable over Vepa in view of Jones and in further in view of Latif et al. (U.S. Patent Number 6,393,483, hereinafter "Latif"). Although Vepa in view of Jones shows substantial features of the claimed invention, Vepa in view of Jones does not show the step of providing a timer to trigger a timed event, and determining whether at least one adapter receives or sends packets during two consecutive timed events, to determine if the adapter is active. Nonetheless this feature is well known in the art and would have been an obvious addition to the system disclosed by Vepa in view of Jones as evidenced by Latif.

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In analogous art, Latif discloses a method and apparatus for network interface card load balancing and port aggregation. Latif shows determining if a port on a NIC is active using timed events: *"When the link check timer routine is performed again after the predetermined timeout, the smart NIC driver 126 will proceed to decision operation 1004 where it will be determined that the primary Rx port P1 is again active as shown in Table D below. As such, the primary Rx port will be once again designated as the receiver as described in operation 1014, after it is determined that the primary Rx port was not the receiver in operation 1010, and shown in Table C above"* (Latif, col. 15, lines 31-39)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the fault tolerance scheme of Vepa in view of Jones so as to use timeouts, such as taught by Latif, in order to check if a NIC is active.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott M. Klinger whose telephone number is (571) 272-3955. The examiner can normally be reached on M-F 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on (571) 272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.




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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Scott M. Klinger  
Examiner  
Art Unit 2153

smk



GLENTON B. BURGESS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100